

REMARKS

The above amendment and these remarks are responsive to the Office Action of Examiner Joshua A. Kading, dated 10 Mar 2004.

Specification

The specification has been objected to for an informality in the citation of related applications.

Applicants have amended the specification accordingly.

Applicants have also amended the specification to incorporate material from a related application S/N 09/746,179 which had been previously incorporated by reference (see Specification, page 1), and to delete certain information not deemed essential.

Claim Objections

Claims 1-15 have been objected to for various

informalities, primarily relating to antecedent basis for various claim elements.

Applicants have amended claims 1, 2, 3, 4, 5, 7, 10, 11, 12, 13, 14, and 15 to correct the informalities.

35 U.S.C. 112

Claims 8 has been rejected under 35 U.S.C. 112, first paragraph, regarding enablement with respect to the phrase "adjusting average...utilization" when burst frames are discarded.

Applicants have amended the specification to incorporate the enabling description from related application Serial No. 09/76,179, filed concurrently with and identified at page 1, lines 5 and 6 of the present application. Thus, the material added to the present application does not represent new matter. The material added to the present application is found at pages 40-44 and 53 of the related application and explains how the utilization is adjusted when burst frames are discarded. While this added material is specific to discrete

utilization, the technique of assigning 100% value to dropped frames is taught, and as will be apparent to those of ordinary skill in the art is equally applicable to the calculation of streaming utilization.

Claims 7-8, 12, and 15 have been rejected under 35 U.S.C. 112, second paragraph.

With respect to claims 7-8, the Examiner finds insufficient antecedent basis for the limitations "average burst rate" and "best burst rate".

Applicants have amended claim 7 to remove the limitations objected to and replace them with "network streaming speed" and "average network streaming speed". These are described in applicant's specification at page 30, line 20 to page 31, line 19, and at page 37, line 14 to page 38, line 4.

With respect to claim 12, the Examiner objects to inclusion of apparatus and computer program elements in the same claim.

Applicants have amended claim 12 to clarify that this

claim is a system claim.

With respect to claim 15, the Examiner objects to the structure of the claim which he finds to be unclear as a program or medium.

Applicants have amended claim 12 to clarify that this claim is a computer program product claim.

35 U.S.C. 102

Claims 1, 2, and 4-5 have been rejected under 35 U.S.C. 102(e) over Kaplan et al. (U.S. Patent 6,473,404 B1).

Kaplan uses individual pings sent in isolation to measure the end-to-end round trip time. Kaplan neither performs nor describes any further analysis of the ping. If a ping takes 2 seconds on path A and 3 seconds on path B, then path A is faster according to Kaplan's method. Kaplan does not analyze the ping's round trip time into component parts.

On the other hand, applicants' invention analyzes pings

of different and like sizes, sent in isolation and in bursts, to compute the network's latency (i.e., propagation delay plus device processing times), the network's queue delay (i.e., what we denote as σTw), the network's utilization, and the network's serialization speed. Moreover, our methodology distinguishes the network's throughput (also called streaming) speed from the network's discrete speed. This has great importance for analyzing the network's performance in handling different types of application traffic.

For example, Kaplan refers repeatedly to how the network will perform in handling file transfer traffic. Yet observing the end-to-end transit times of pings sent in isolation from each other tells very little about how the network will perform in handling file transfers. This is because, as is noted in applicants' co-pending patent application Serial No. 09/76,179, that an individual packet's transit time is increased for each hop in the network. So, for example, if a network consists of two hops, each of a speed of 19.2 kbps, a ping across it will behave the same as a ping across an equal length single hop 9.6 kbps network. In fact, conversational applications will also behave the same in these two networks. However,

file transfers will go twice as fast across the two hop 19.2 kbps network as the single hop 9.6 kbps network. Kaplan's method fails to take this into account. Applicants' method would discover the streaming speed of each of these networks (19.2 kbps for the 2 hop network, and 9.6 for the 1 hop network), the conversational speed of the networks (both networks would be 9.6 kbps conversational speed), the latency of the network (dependent on the end-to-end length of the network), and the utilization of the network (both streaming utilization and conversational). Thus, applicants' invention is not taught by Kaplan, and is a far improved art for network analysis.

Specifically, at Col. 6, lines 15-21, Kaplan is using the unanalyzed ping end-to-end time as a raw component of a manufactured "quality" number from which a value called "\$speed" can be computed, where \$speed is a factor used as an indicator of relative performance of a path. This measure is subject to all the flaws mentioned above... i.e., there is no measure of the the path's actual streaming capacity and no analysis of why a ping took more or less time along one path than another. Without such analysis, there is no true determination of how the network can be expected to perform. Applicants invention provides precise

answers to these questions by performing a deep analysis.

Applicants have amended claim 1, 2, and 4-5, not to distinguish Kaplan, but to more correctly set forth applicants' invention and conform the claims to the specification. See Specification, at pages 40, line 1 to page 44, line 2, and page 53, lines 3-7.

35 U.S.C. 103

Claim 6 has been rejected under 35 U.S.C. 103(a) over Kaplan et al. in view of McKee et al. (U.S. Patent 5,477,531).

Applicant cancels claim 6 without prejudice.

Claims 9-11 and 13 have been rejected under 35 U.S.C. 103(a) over Kaplan et al. in view of applicant's admitted prior art.

Kaplan has been previously distinguished, and does not teach applicants' invention even when considered in connection with what the Examiner characterizes as his

understanding of applicant's admitted prior art.

Claim 14 has been rejected under 35 U.S.C. 103(a) over Kaplan, et al.

As previously discussed, Kaplan has been distinguished, and does not teach applicants' invention.

Allowable Subject Matter

Claim 3 has been objected to as being dependent on a rejected base claim, but otherwise allowable.

Applicants have introduced claim 25 drawn as an independent claim based on claims 1-3, rewritten to more correctly set forth applicants' invention.

SUMMARY AND CONCLUSION


Applicants urge that the above amendments be entered and the case passed to issue with claims 1-5, and 7-25.

The Application is believed to be in condition for allowance and such action by the Examiner is urged. Should differences remain, however, which do not place one/more of the remaining claims in condition for allowance, the Examiner is requested to phone the undersigned at the number provided below for the purpose of providing constructive assistance and suggestions in accordance with M.P.E.P. Sections 707.02(j) and 707.03 in order that allowable claims can be presented, thereby placing the Application in condition for allowance without further proceedings being necessary.

Sincerely,

R. K. P. Klassen, et al.

By


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